SHARP

SUPPLEMENTAL SERVICE MANUAL

S9127R202EPK/

MICROWAVE OVEN

MODEL R-202EK

In the interest of user-safety the oven should be restored to its original condition and only parts identical to those specified should be used.

WARNING TO SERVICE PERSONNEL: Microwave ovens contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock. (High Voltage Capacitor, High Voltage Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness etc..)

This is a supplemental Service Manual for Model R-202EK. This model is quite similar to base model R-202EW. Use this supplemental manual together with the Base Model Service Manual (Refer No. is S7116R202EPW/) for complete operation, service information, etc..

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(a) Do not operate or allow the oven to be operated with the door open.
(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.
(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(e) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

BEFORE SERVICING

Before servicing an operative unit, perform a microwave emission check as per the Microwave Measurement Procedure outlined in this service manual.
If microwave emissions level is in excess of the specified limit, contact SHARP ELECTRONICS CORPORATION immediately @1-800-237-4277.

If the unit operates with the door open, service person should 1) tell the user not to operate the oven and 2) contact SHARP ELECTRONICS CORPORATION and The Food and Drug Administration's Center for Devices and Radiological Health immediately.

Service personnel should inform SHARP ELECTRONICS CORPORATION of any certified unit found with emissions in excess of 4mW/cm^2. The owner of the unit should be instructed not to use the unit until the oven has been brought into compliance.

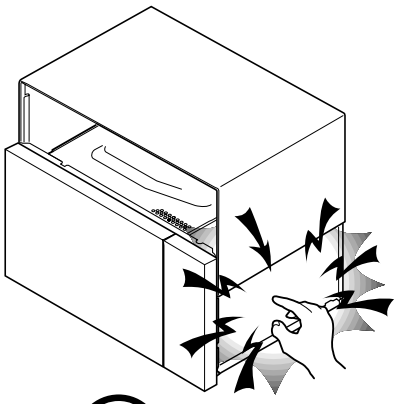
WARNING TO SERVICE PERSONNEL

Microwave ovens contain circuitry capable of producing very high voltage and current, contact with following parts may result in a severe, possibly fatal, electrical shock.

(Example)

High Voltage Capacitor, High Voltage Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness etc..

Read the Service Manual carefully and follow all instructions.



Don't Touch !
Danger High Voltage

Before Servicing

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.

WARNING: RISK OF ELECTRIC SHOCK. DISCHARGE THE HIGH-VOLTAGE CAPACITOR BEFORE SERVICING.

The high-voltage capacitor remains charged about 60 seconds after the oven has been switched off. Wait for 60 seconds and then short-circuit the connection of the high-voltage capacitor (that is the connecting lead of the high-voltage rectifier) against the chassis with the use of an insulated screwdriver.

Whenever troubleshooting is performed the power supply must be disconnected. It may, in some cases, be necessary to connect the power supply after the outer case has been removed, in this event,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Disconnect the leads to the primary of the power transformer.
5. Ensure that the leads remain isolated from other components and oven chassis by using insulation tape.
6. After that procedure, reconnect the power supply cord.

When the testing is completed,

1. Disconnect the power supply cord, and then remove outer case.
2. Open the door and block it open.
3. Discharge high voltage capacitor.
4. Reconnect the leads to the primary of the power transformer.
5. Reinstall the outer case (cabinet).
6. Reconnect the power supply cord after the outer case is installed.
7. Run the oven and check all functions.

After repairing

1. Reconnect all leads removed from components during testing.
2. Reinstall the outer case (cabinet).
3. Reconnect the power supply cord after the outer case is installed.
4. Run the oven and check all functions.

Microwave ovens should not be run empty. To test for the presence of microwave energy within a cavity, place a cup of cold water on the oven turntable, close the door and set the power to HIGH and set the microwave timer for two (2) minutes. When the two minutes has elapsed (timer at zero) carefully check that the water is now hot. If the water remains cold carry out **Before Servicing** procedure and re-examine the connections to the component being tested.

When all service work is completed and the oven is fully assembled, the microwave power output should be checked and a microwave leakage test should be carried out.

MICROWAVE MEASUREMENT PROCEDURE

A. Requirements:

1) Microwave leakage limit (Power density limit): The power density of microwave radiation emitted by a microwave oven should not exceed 1mW/cm^2 at any point 5cm or more from the external surface of the oven, measured prior to acquisition by a purchaser, and thereafter (through the useful life of the oven), 5 mW/cm^2 at any point 5cm or more from the external surface of the oven.
2) Safety interlock switches:
   Primary interlock relay and door sensing switch shall prevent microwave radiation emission in excess of the requirement as above mentioned, secondary interlock switch shall prevent microwave radiation emission in excess of 5 mW/cm^2 at any point 5cm or more from the external surface of the oven.

B. Preparation for testing:
Before beginning the actual measurement of leakage, proceed as follows:
1) Make sure that the actual instrument is operating normally as specified in its instruction booklet.

   Important:
   Survey instruments that comply with the requirement for instrumentation as prescribed by the performance standard for microwave ovens, 21 CFR 1030.10(c)(3)(i), must be used for testing.

2) Place the oven tray in the oven cavity.
3) Place the load of 275±15 ml (9.8 oz) of tap water initially at 20±5˚C (68˚F) in the center of the oven cavity.
   The water container shall be a low form of 600 ml (20 oz) beaker with an inside diameter of approx. 8.5 cm (3-1/2 in.) and made of an electrically nonconductive material such as glass or plastic.
   The placing of this standard load in the oven is important not only to protect the oven, but also to insure that any leakage is measured accurately.
4) Set the cooking control on Full Power Cooking Mode
5) Close the door and select a cook cycle of several minutes. If the water begins to boil before the survey is completed, replace it with 275 ml of cool water.

C. Leakage test:

Closed-door leakage test (microwave measurement)
1) Grasp the probe of the survey instrument and hold it perpendicular to the gap between the door and the body of the oven.
2) Move the probe slowly, not faster than 1 in./sec. (2.5 cm/sec.) along the gap, watching for the maximum indication on the meter.
3) Check for leakage at the door screen, sheet metal seams and other accessible positions where the continuity of the metal has been breached (eg., around the switches, indicator, and vents).
   While testing for leakage around the door pull the door away from the front of the oven as far as is permitted by the closed latch assembly.
4) Measure carefully at the point of highest leakage and make sure that the highest leakage is no greater than 4mW/cm^2, and that the secondary interlock switch does turn the oven OFF before any door movement.

NOTE: After servicing, record data on service invoice and microwave leakage report.

SERVICE MANUAL

SHARP

MICROWAVE OVEN

R-202EK

FOREWORD

This Manual has been prepared to provide Sharp Electronics Corp. Service Personnel with Operation and Service Information for the SHARP MICROWAVE OVEN, R-202EK.

The model R-202EK is quite similar to base model R-202EW (Refer No. is S7116R202EPW/).

It is recommended that service personnel carefully study the entire text of this manual and the base model's manual so that they will be qualified to render satisfactory customer service.

Check the interlock switches and the door seal carefully. Special attention should be given to avoid electrical shock and microwave radiation hazard.

WARNING

Never operate the oven until the following points are ensured.
(A) The door is tightly closed.
(B) The door brackets and hinges are not defective.
(C) The door packing is not damaged.
(D) The door is not deformed or warped.
(E) There is no other visible damage with the oven.

Servicing and repair work must be carried out only by trained service personnel.

DANGER

Certain initial parts are intentionally not grounded and present a risk of electrical shock only during servicing. Service personnel - Do not contact the following parts while the appliance is energized;
High Voltage Capacitor, Power Transformer, Magnetron, High Voltage Rectifier Assembly, High Voltage Harness;
If provided, Vent Hood, Fan assembly, Cooling Fan Motor.

All the parts marked "*" on parts list are used at voltages more than 250V.

Removal of the outer wrap gives access to voltage above 250V.

All the parts marked "Δ" on parts list may cause undue microwave exposure, by themselves, or when they are damaged, loosened or removed.

SHARP ELECTRONICS CORPORATION

**SHARP PLAZA, MAHWAH,
NEW JERSEY 07430-2135**

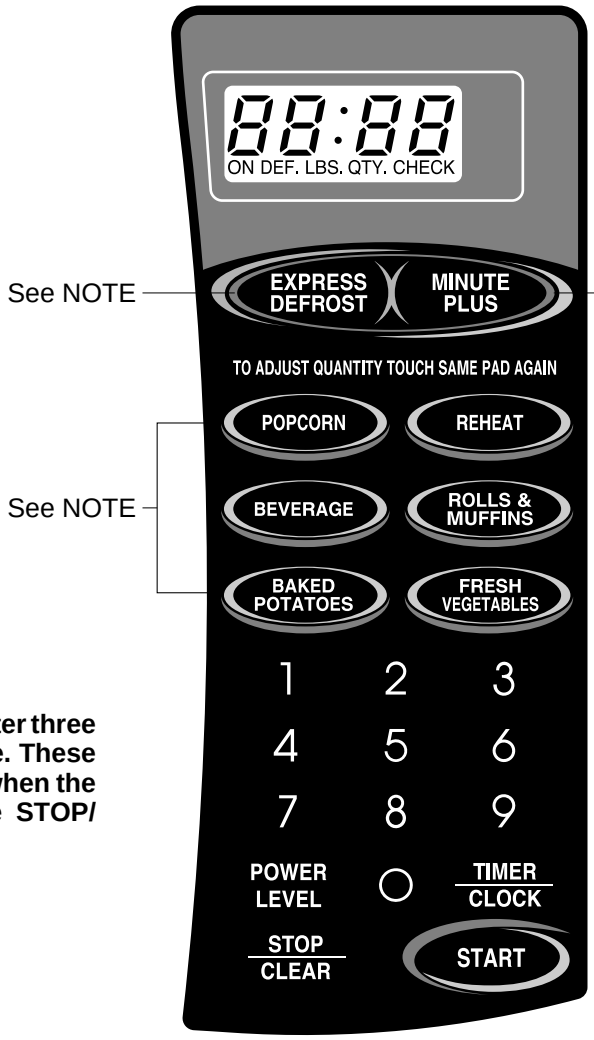
PRODUCT DESCRIPTION

SPECIFICATIONS

ITEM	DESCRIPTION
Power Requirements	120 Volts 60 Hertz Single phase, 3 wire grounded
Power Consumption	1100W / Approx. 9.6 Amperes
Power Output	700 W nominal of RF microwave energy (IEC Test procedure) Operating frequency 2450 MHz
Case Dimensions	Width 18-1/8" Height 10-7/8" Depth 13-1/4"
Cooking Cavity Dimensions (0.7 Cubic feet)	Width 12-5/8" Height 7-7/8" Depth 13-1/4"
Control Complement	Touch Control System Clock (1:00 - 12:59) Timer (0 - 99 minutes 99 seconds) Microwave Power for Variable Cooking Repetition Rate; P-HI ..... Full power throughout the cooking time P-90 ..... approx. 90% of FULL Power P-80 ..... approx. 80% of FULL Power P-70 ..... approx. 70% of FULL Power P-60 ..... approx. 60% of FULL Power P-50 ..... approx. 50% of FULL Power P-40 ..... approx. 40% of FULL Power P-30 ..... approx. 30% of FULL Power P-20 ..... approx. 20% of FULL Power P-10 ..... approx. 10% of FULL Power P-0 ..... No power throughout the cooking time EXPRESS DEFROST pad MINUTE PLUS pad Instant Start pads Number selection pads TIMER / CLOCK pad POWER LEVEL pad START pad STOP/CLEAR pad
Oven Cavity Light	Yes
Safety Standard	UL Listed. FCC Authorized DHHS Rules, CFR, Title 21, Chapter 1, Subchapter J

OVEN DIAGRAM

TOUCH CONTROL PANEL



NOTE:
The directed features are disabled after three minutes when the oven is not in use. These features are automatically enabled when the door is opened and closed or the STOP/ CLEAR pad is pressed.

SCHEMATIC

NOTE: CONDITION OF OVEN
1. DOOR CLOSED
2. CLOCK APPEARS ON DISPLAY

NOTE: "★" indicates components with potential above 250V.

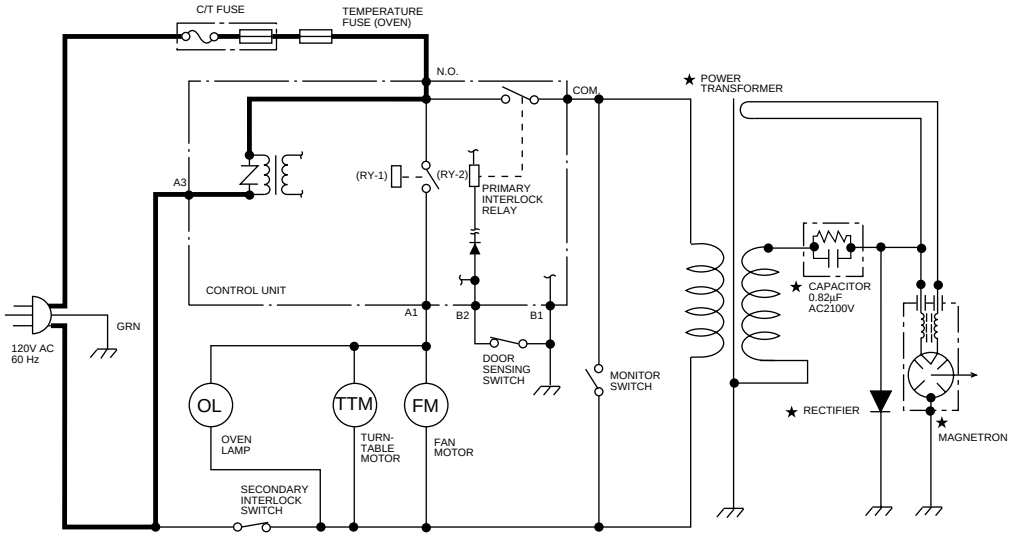


Figure O-1. Oven Schematic-Off Condition

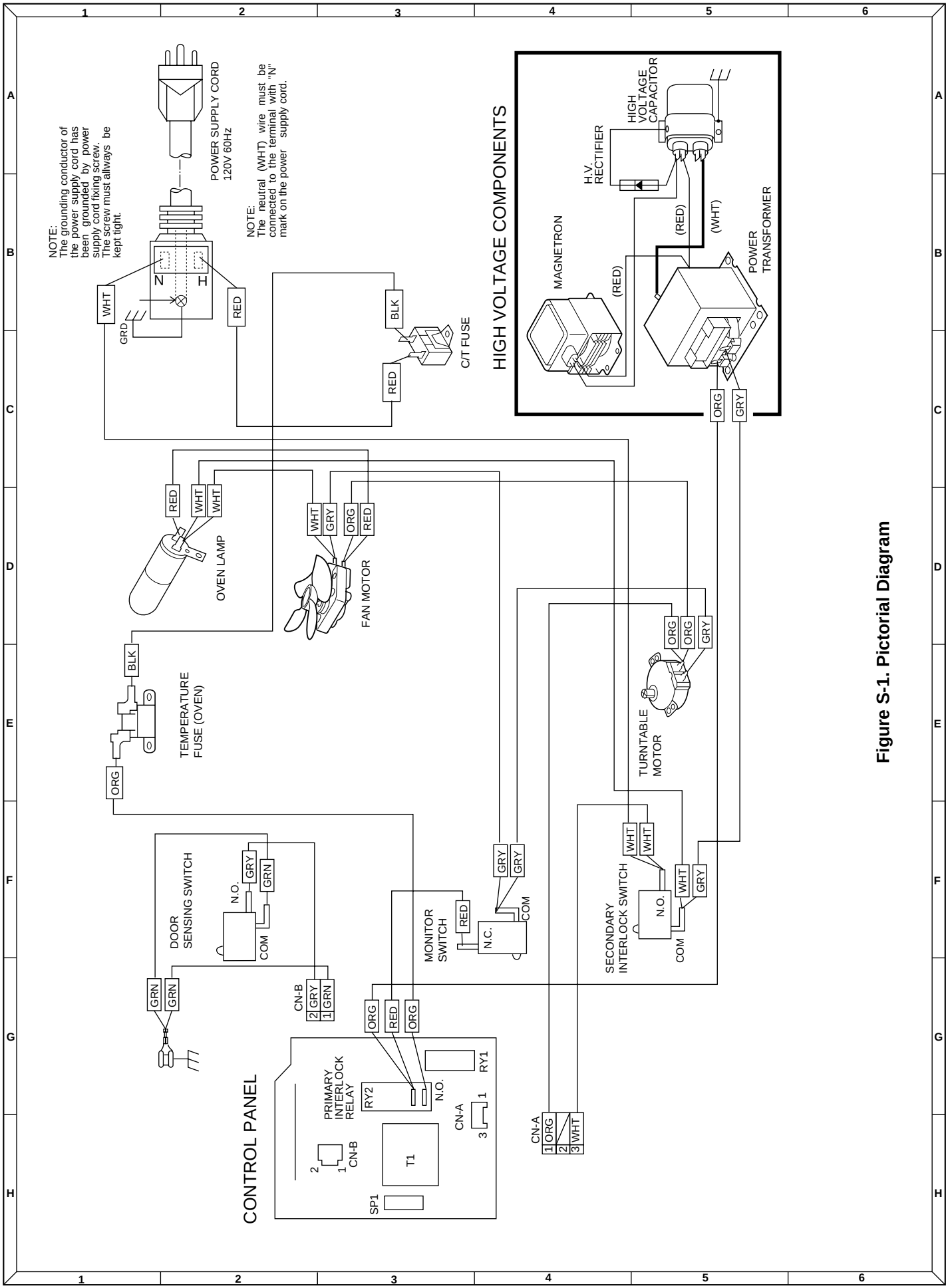


Figure S-1. Pictorial Diagram

PARTS LIST

Note: The parts marked "Δ" may cause undue microwave exposure.
The parts marked "*" are used in voltage more than 250V.

	REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
			ELECTRIC PARTS		
	1- 1	QSW-MA085WRE0	Second interlock switch/ Door sensing switch	2	AF
	1- 1	QSW-MA137WRE0	Second interlock switch/ Door sensing switch (Interchangeable)	2	AH
	1- 2	FFS-BA027WRKZ	C/T fuse (120˚C, 13A) and monitor switch assembly (AM51620C53Y1)	1	AS
	1- 3	FACCDA079WRE0	Power supply cord	1	AF
	1- 3	FACCDA064WRE0	Power supply cord (Interchangeable)	1	AF
*	1- 4	FH-DZA102WRKZ	High voltage rectifier assy	1	AN
*	1- 4	FH-DZA088WRK0	High voltage rectifier assy (Interchangeable)	1	AP
*	1- 5	RC-PZA041WRE0	High voltage capacitor	1	AS
*	1- 5	RC-QZA307WRZZ	High voltage capacitor (Interchangeable)	1	AX
	1- 6	RMOTEA383WRE0	Fan motor	1	AV
	1- 6	RMOTEA355WRE0	Fan motor (Interchangeable)	1	AU
*Δ	1- 7	RV-MZA226WRE0	Magnetron	1	BE
*Δ	1- 7	RV-MZA306WRZZ	Magnetron (Interchangeable)	1	BL
	1- 8	RLMPTA082WRZZ	Oven lamp	1	AL
	1- 9	RMOTDA186WRE0	Turntable motor	1	AW
	1- 9	RMOTDA211WRE0	Turntable motor (Interchangeable)	1	AS
	1- 9	RMOTDA229WRE0	Turntable motor (Interchangeable)	1	AQ
	1-10	QFS-TA038WRE0	Temperature fuse 120˚C (Oven)	1	AK
*	1-11	RTRN-A648WRZZ	Power transformer	1	BH
			CABINET PARTS		
	2- 1	GCABUA828WRPZ	Outer case cabinet	1	BD
	2- 2	GLEGPA074WRE0	Foot	2	AC
			CONTROL PANEL PARTS		
	3- 1	FPNLCB602WRKZ	Control panel frame with key unit	1	BA
	3- 1-1	FUNTKB098WREZ	Key unit	1	AW
	3- 2	JBTN-B164WRFZ	Open button	1	AK
	3- 3	MSPRCA050WRE0	Open button spring	1	AB
	3- 4	DPWBFC188WRUZ	Control unit	1	BH
	3- 5	QCNC-A014WRZZ	Rubber connector	1	AE
	3- 6	RLCDSA097DRZZ	Liquid crystal display	1	AM
	3- 7	XEPSD30P08XS0	Screw; 3mm x 8mm	3	AA
			OVENPARTS		
Δ	4- 1	PHOK-A120WRFZ	Latch hook	1	AH
	4- 2	LBNDKA038WRP0	Capacitor holder	1	AF
	4- 3	NFANJA029WRE0	Fan blade	1	AK
	4- 4	PDUC-A777WRPZ	Fan duct	1	AP
Δ	4- 5	**********	Oven cavity **(Not replaceable part)**	1	--
	4- 6	GCOVHA425WRPZ	Turntable motor cover	1	AK
	4- 7	MLEVPA241WRFZ	Switch lever	1	AG
	4- 8	PCOVPA276WRE0	Waveguide cover	1	AM
	4- 9	PCUSUA237WRP0	Cushion	2	AF
	4-10	PPACGA176WREZ	TTM packing	1	AC
	4-11	PCUSUA278WRP0	Cushion	1	AB
	4-12	PCUSUA409WRP0	Cushion	1	AD
	4-13	PCUSGA568WREZ	Cushion	1	AC
			DOORPARTS		
Δ	5- 1	FDORFA348WRTZ	Door panel assembly	1	BC
Δ	5- 2	GWAKPA834WRRZ	Door frame	1	AR
	5- 3	HPNL-A764WREZ	Door screen	1	AP
Δ	5- 4	LSTPPA205WRFZ	Latch head	1	AF
	5- 5	MSPRTA187WRE0	Spring	1	AC
	5- 6	PSHEPA782WREZ	Sealer film	1	AG
	5- 7	GCOVHA424WRFZ	Choke cover	1	AK
			MISCELLANEOUS		
	6- 1	NTNT-A034WRF0	Turntable	1	AM
	6- 2	FROLPA099WRKZ	Turntable support	1	AP
	6- 3	TCAUAA258WRRZ	Monitor caution	1	AC
	6- 4	TCAUAA268WRRZ	DHHS caution label	1	AF
	6- 5	TINSEA919WRRZ	Instruction book	1	AM
	6- 6	FW-VZB837WREZ	Main wire harness	1	AR

REF. NO.	PART NO.	DESCRIPTION	Q'TY	CODE
		SCREWS, NUTS AND WASHERS		
7- 1	XHPSD40P08K00	screw : 4 mm x 8 mm	2	AC
7- 2	XHTSD40P08RV0	Screw : 4mm x 8mm	4	AA
7- 3	LX-CZA070WRE0	Special screw (Torx tamper proof screw)	2	AC
7- 4	LX-CZ0052WRE0	Special screw	2	AA
7- 5	LX-EZA042WRE0	Special screw	2	AB
7- 6	XHPSD30P06000	Screw : 3mm x 6mm	1	AA
7- 7	XHPSD40P08000	Screw : 4mm x 8mm	3	AA
7- 8	XHTSD40P12RV0	Screw : 4mm x 12mm	1	AA
7- 9	XOTSF40P08000	Screw : 4mm x 8mm	2	AA
7-10	XOTSD40P08000	Screw : 4mm x 8mm	7	AA
7-11	XCPSD40P06000	Screw : 4mm x 6mm	1	AA

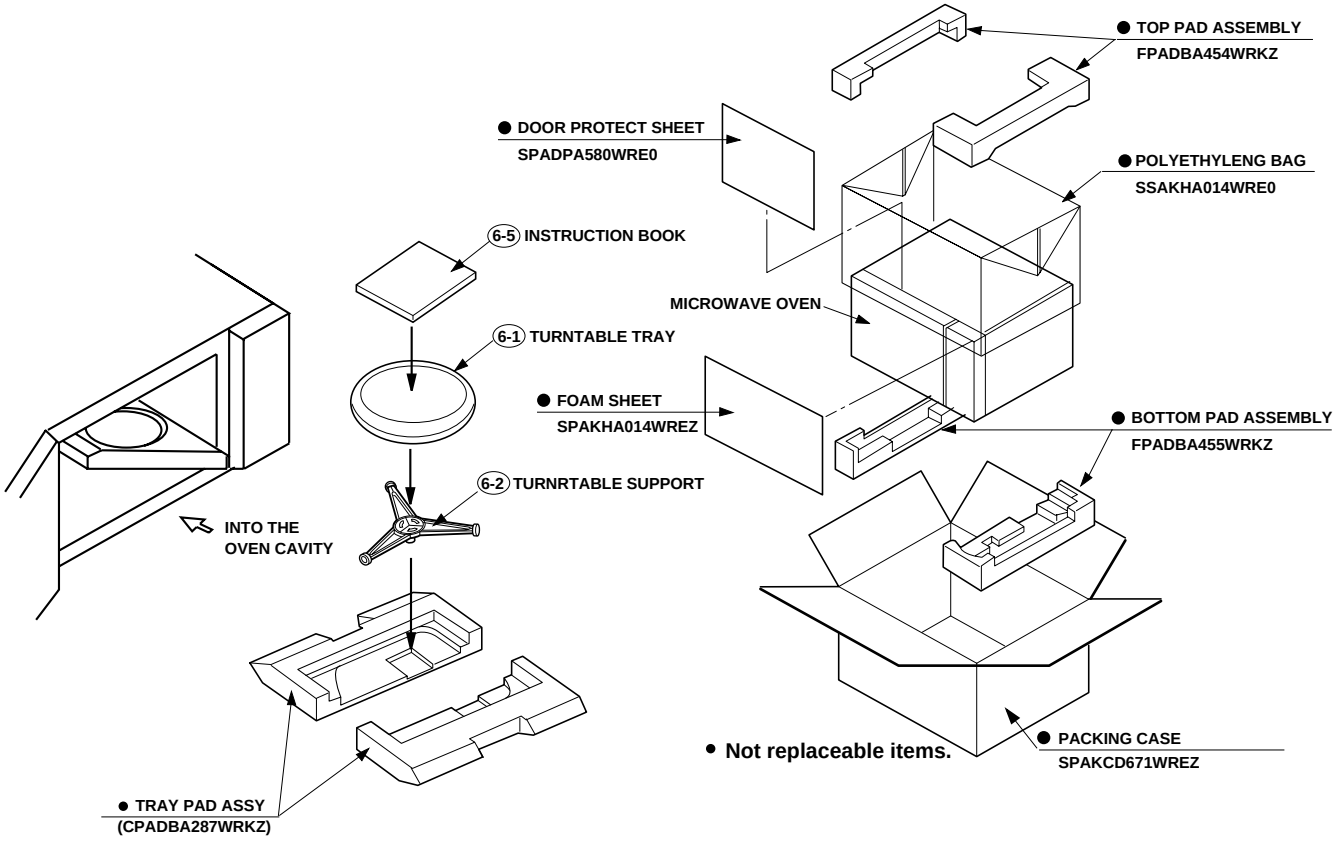
HOW TO ORDER REPLACEMENT PARTS

To have your order filled promptly and correctly, please furnish the following information.

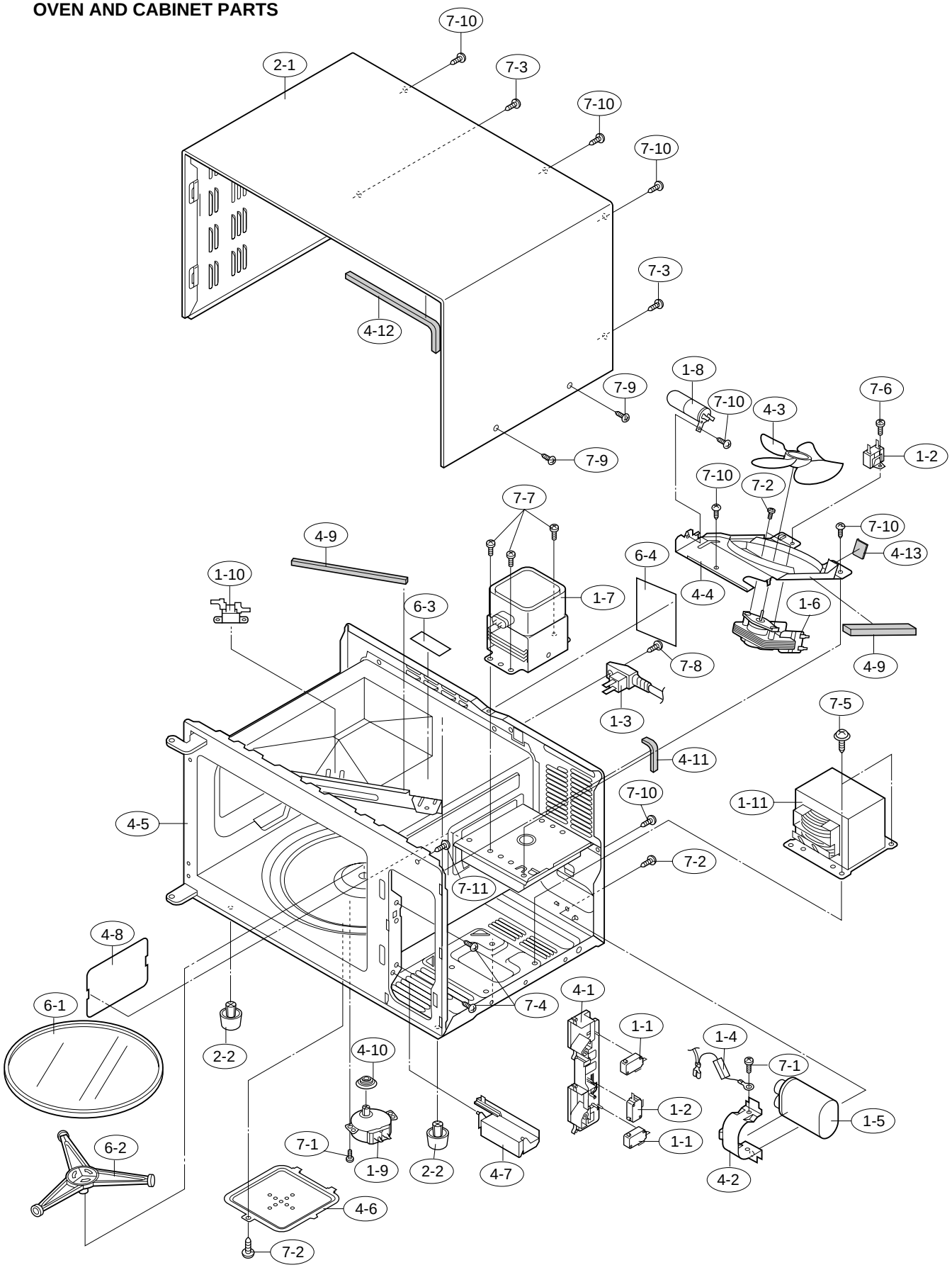
1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION

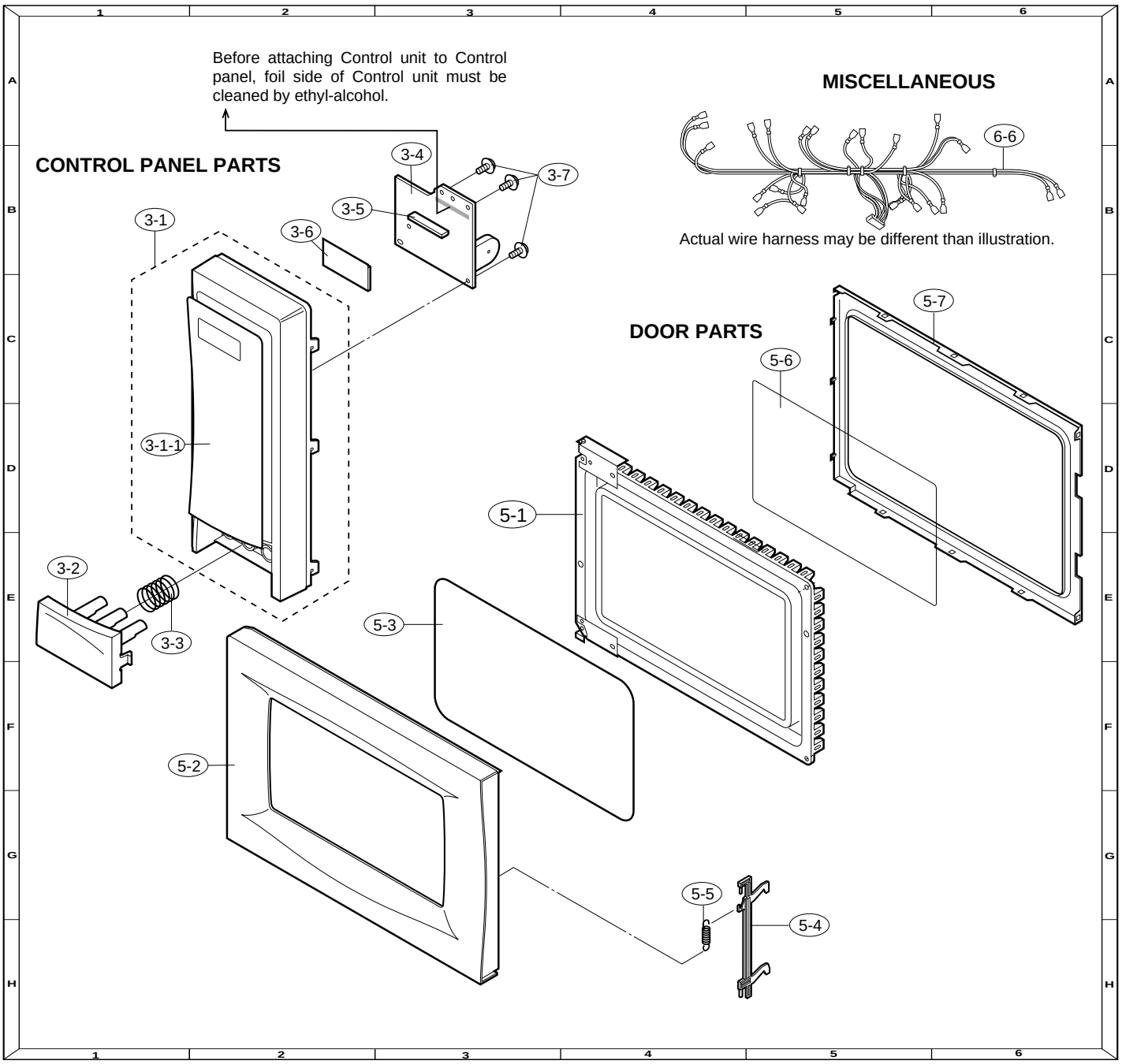
Order Parts from the authorized SHARP parts Distributor for your area.
Defective parts requiring return should be returned as indicated in the Service Policy.

PACKING AND ACCESSORIES



OVEN AND CABINET PARTS





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